

DETAILED ACTION

Claim Objections

1. Claims 4a and 4b are objected to because of the following informalities: The claims are numbered 4a and 4b and should be numbered with standard Arabic numerals only. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claims 4a and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4a and 16 contain the trademark/trade name DMD. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe a digital

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imaging device with a plurality of micromirrors used to produce an image and, accordingly, the identification/description is indefinite.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 5-6, 8, 9, 12-14, 17-18, 20, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto (US Patent 5,459,539).

Regarding claim 1, Yamamoto teaches a first lens group having a first optic axis (32 figure 3); and a second lens group having a second optic axis (35, figure 3), wherein the second lens group is adapted to rotate about the first optic axis (L, figure 3; column 2 lines 54-59).

Regarding claim 5, Yamamoto further teaches, the optical system is disposed over a base (25, figure 2).

Regarding claim 6, Yamamoto further teaches, the rotation is relative to the base (L, figure 2).

Regarding claim 8, Yamamoto further teaches, the rotation is counterclockwise or clockwise (L, figure 3).

Regarding claim 9, Yamamoto further teaches, the first lens assembly is disposed in a first tube (29a, figure 3), and the second lens assembly is disposed in a second tube (29b, figure 3; column 2 lines 36-44).

Regarding claim 10, Yamamoto further teaches both the first and second lens assemblies are disposed in a tube (29, figure 3)

Regarding claim 12, Yamamoto teaches a first optic axis (column 1 lines 33-43); and a lens group having a second optic axis (35, figure 3), wherein the lens group is adapted to rotate about the first optic axis (column 2 lines 54-59).

Regarding claim 13, Yamamoto further teaches a display panel which provides an image to the lens group and along the first optic axis (33, figure 3).

Regarding claim 14, Yamamoto further teaches the display panel is a liquid crystal panel of a liquid crystal imaging system (33, figure 3).

Regarding claim 17, Yamamoto further teaches the optical system is disposed over a base (25, figure 2).

Regarding claim 18, Yamamoto further teaches the rotation is relative to the base (L, figure 2).

Regarding claim 20, Yamamoto further teaches, the rotation is counterclockwise or clockwise (L, figure 3).

Regarding claim 22, Yamamoto further teaches, the first optic axis is orthogonal to the second optic axis (column 1 lines 33-43).

Claim Rejections - 35 USC § 103

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6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2-3, 7 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto (US Patent 5,459,539) in view of Sugano (US Patent 6,144,503).

Regarding claim 2, Yamamoto does not teach the display panel provides an image to the first lens group and along the first optic axis. Sugano teaches the display panel provides an image to the first lens group along the first optical axis (9, 12, 18, 300, figure 5). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to replace the projection lens of Yamamoto with the projection lens of Sugano because the projection lens of Yamamoto accurately corrects for different types of aberration (column 3 lines 57-63).

Regarding claim 3, Yamamoto further teaches the display panel is a liquid crystal panel of a liquid crystal imaging system (33, figure 3).

Regarding claims 7 and 19, Sugano further teaches the image is projected onto a rear mirror of a rear projection display system (504, figure 1A). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the projection system of Yamamoto with the rear projection system of Sugano because the rear projection system can display clearer images in bright environments (Yamaguchi: column 11, lines 42-52).

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8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto in view of Sugano as applied to claim 3 above, and further in view of Seo et al. (US 2002/0154273 A1).

Regarding claim 4, Yamamoto in view of Sugano does not teach the liquid crystal panel is a liquid crystal on silicon device. Seo teaches the use of LCOS imagers as light modulators (60, figure 1). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the projector system of Yamamoto in view of Sugano with the LCOS imaging of Seo because the LCOS imaging is smaller and has a higher resolution (paragraph 0006).

9. Claim 4a is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto in view of Sugano as applied to claim 2 above, and further in view of Dewald (US 2001/0008470 A1).

Regarding claim 4a, Yamamoto in view of Sugano does not teach the display panel is a DMD device. Dewald teaches the display panel is a DMD device (paragraph 0032). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the projector system of Yamamoto in view of Sugano with the DMD of Dewald because the DMD of Dewald has a fast response time allows a projector to use a single modulator to create a full color image (paragraph 0005).

10. Claim 4b is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto (US Patent 5,459,539) in view of Roddy et al. (US 2003/0214633 A1).

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Regarding claim 4b, Yamamoto does not teach the projection display system is a scanning laser beam projection system. Roddy teaches the projection display system is a scanning laser beam projection system (paragraph 0083). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the projection system of Yamamoto with the scanning laser system of Roddy because the scanning laser system of Roddy can be used for large scale projection applications that require high brightness levels with highly saturated color (paragraph 0085).

11. Claims 11 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto in view of Yamaguchi et al. (US Patent 6,185,038 B1).

Regarding claims 11 and 21, Yamamoto does not teach said projection system is a rear projection television. Yamaguchi teaches said projection system is a rear projection television (Yamaguchi: figure 5). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the projection system of Yamamoto with the rear projection system of Yamaguchi because the rear projection system of Yamaguchi can display clearer images in bright environments (Yamaguchi: column 11, lines 42-52).

12. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto in view of Seo et al. (US 2002/0154273 A1).

Regarding claim 15, Yamamoto does not teach the liquid crystal panel is a liquid crystal on silicon device. Seo teaches the use of LCOS imagers as light modulators (60, figure 1). It would have been obvious to a person having ordinary skill in the art at

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the time the invention was made to combine the projector system of Yamamoto with the LCOS imaging of Seo because the LCOS imaging is smaller and has a higher resolution (paragraph 0006).

13. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto in view of Dewald (US 2001/0008470 A1).

Regarding claim 16, Yamamoto does not teach the display panel is a DMD device. Dewald teaches the display panel is a DMD device (paragraph 0032). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the projector system of Yamamoto with the DMD of Dewald because the DMD of Dewald has a fast response time allows a projector to use a single modulator to create a full color image (paragraph 0005).

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RYAN HOWARD whose telephone number is (571)270-5358. The examiner can normally be reached on Monday-Friday 7:30-5:00, First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on (571)272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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